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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,150	06/16/2006	Tae-Gwan Eom	JIN 101NP	2566

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EXAMINER	
SCHAPER, MICHAEL T	
ART UNIT	PAPER NUMBER
3775	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,150	EOM ET AL.	
	Examiner	Art Unit	
	MICHAEL T. SCHAPER	3775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's amendments, see 15 May 2009 Remarks, with respect to 35 USC101 Rejections have been fully considered and are substantially corrected. The rejection of 18 Feb 2009 has been withdrawn.

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claims 1, 6, and 11-14 are objected to because of the following informalities:

In claim 1, line 12, "**is**" should read "being".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claimed limitation "**wherein a width of the ridge of the large cortical screw thread is greater than a width of the ridge of the large cancellous screw**

thread" (claim 18, lines 1-3) renders the claim indefinite because the ridges are not present anymore as the small cortical and cancellous screw threads have been formed in them. For examination purposes, the limitation will be interpreted to mean consecutive peak lengths are different and that of the cortical screw thread is larger.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmen et al. (US 2004/0006346) in view of Bono et al. (US 6129730).

Holmen discloses a fixture (1), having a screw shape, to be implanted in bone tissue, the fixture comprising an uppermost part (5) and a body part (1 less 5) connected to the uppermost part, the body part having a cortical bone coupling part (2 + 3 proximal to P_2) and a cancellous bone coupling part (3 distal to P_2) wherein the cancellous bone coupling part includes a large cancellous screw thread (12) formed on a circumferential outer surface of the cancellous bone coupling part; and ([0082] states a triple thread, *i.e.* one main thread with 2 secondary threads on that thread's ridge) the cortical bone coupling part includes a large cortical screw thread (main thread) extending from the large cancellous screw thread and a small cortical screw thread (1 of secondary threads, and then another one) formed on a ridge of the large cortical screw

thread; and the cortical bone coupling part includes a cortical screw thread, a distance between all of two adjacent peaks of the cortical screw thread being the same throughout an entire length of the cortical bone coupling part (see FIG. 1b), and the cortical bone has a pitch, a root diameter and an outer diameter *almost* equal to a pitch, a root diameter and an outer diameter of the small cancellous screw thread (see FIG. 1b, [0084]); wherein the uppermost part is unthreaded (see FIG. 1b), and the body part is threaded (see FIG. 1a); wherein the cortical bone coupling part is disposed between the uppermost part and the cancellous bone coupling part, and the cortical bone coupling part comes in direct contact with the uppermost part (see FIG. 1b); wherein the uppermost part has a top portion and a bottom portion, and has a conical shape which is reduced in diameter from the bottom portion to the top portion (see FIG. 1b); wherein the cortical bone coupling part comes in direct contact with the bottom portion of the uppermost part (see FIG. 1b); wherein the large cortical screw thread has a lead equal to a lead of the large cancellous screw thread ([0084]); wherein a root diameter of the large cortical screw thread is increased from a lower end thereof to an upper end thereof and is equal to a root diameter of the small cortical screw thread at the upper end thereof (see FIG. 1a); wherein a root diameter of the large cancellous screw thread is constant throughout the cancellous bone coupling part (see FIG. 1a); wherein a width of the ridge of the large cortical screw thread is greater than a width of the ridge of the large cancellous screw thread (see 35 USC 112-2nd ¶ rejection above—due to angling at tip of thread, the lead will stay the same in the horizontal direction, but the distance along the angle will cause the peak length to be larger at the cortical part); wherein the

number of small cortical screw threads (2) formed on a single one of the ridge of the large cortical screw thread is greater than the number of small cancellous screw threads (now, 0) formed on a single one of the ridge of the large cancellous screw thread.

Holmen discloses the claimed invention except for a small cancellous screw thread formed on a ridge of the large cancellous screw thread.

Bono discloses a small cancellous screw thread formed on a ridge of the large cancellous screw thread (37 in section #18, see FIG. 4) for enhanced pullout resistance (see abstract).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to have modified the device of Holmen with a small cancellous screw thread formed on a ridge of the large cancellous screw thread in view of Bono for enhanced pullout resistance.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmen et al. (US 2004/0006346) in view of Bono et al. (US 6129730) further in view of Brånemark (US 5702443).

Holmen discloses the claimed invention except for the screw further comprising a plurality of longitudinal grooves formed in a circumferential outer surface of the cortical bone coupling part.

Brånemark discloses a screw further comprising a plurality of longitudinal grooves (12, see FIGS. 5-6) formed in a circumferential outer surface of the cortical

bone coupling part (as well as the cancellous part) for forming key to prevent pullout via bone ingrowth (col. 4 / lines 44-59).

At the time of invention, it would have been obvious to a person ordinary skill in the art to have modified the device of Holmen with a plurality of longitudinal grooves formed in a circumferential outer surface of the cortical bone coupling part in view of Brånemark for forming key to prevent pullout via bone ingrowth.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. SCHAPER whose telephone number is (571)270-7413. The examiner can normally be reached on M-F, 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Barrett can be reached on (571)272-4746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T. S./
Examiner, Art Unit 3775

/Thomas C. Barrett/
Supervisory Patent Examiner, Art Unit 3775